Abstract of the Disclosure

An input port for a network switch includes a cell buffer for receiving incoming unicast and multicast cells and for writing each cell into an internal cell memory. The cell buffer thereafter forwards each unicast cell from the cell memory to one network switch output port and forwards a separate copy of each multicast cell to each of several network switch output ports. When the cell buffer writes a unicast cell to the cell memory, it sends a pointer to the storage location of the unicast cell to a queue manager. When the cell buffer writes a multicast cell to the cell memory, it sends several pointers to the queue manager, one for each output port that is to receive a copy of the multicast cell, with each pointer pointing not to the multicast cell's storage location but to an empty storage location in the cell memory. The cell buffer also maintains a database relating each pointer it sent to the queue manager to an actual storage location of a unicast or multicast cell. The queue manager queues the pointers an order in which cells are to be forwarded from the cell buffer, and thereafter returns a pointer to the cell buffer whenever the cell buffer is to forward a unicast cell or a copy of a multicast cell from the cell memory. The cell buffer applies each returned pointer to the database to determine the actual location of the unicast or multicast cell to be forwarded.